unconventional slow viruses in that they appear to lack any structural protein but consist only of naked ribonucleic acid (RNA). Studies of these agents may prove useful to our understanding of their animal counterparts.

An interesting and important matter to recognize is the extraordinary differences that are seen in the diseases produced by a single virus. Who would have anticipated that such an ordinary run-of-the-mill virus such as measles would be found to cause not only the acute illness of classical measles but a highly fatal indolent encephalitis (SSPE) from 1 to 20 or more years after the acute infection and to be a prime suspect as an etiologic agent of a chronic relapsing central nervous system disease—multiple sclerosis?

It is quite apparent that the simplistic view of a virus disease or infection as an acute self-limiting episode followed by immunity and elimination of the virus can no longer be sustained. It seems probable that persistence of virus in some form in some cells of the body is the more usual outcome, dependent to a considerable degree upon the age of the host at the time of infection and other factors relating to the immunologic capacity of the host and genetic characteristics of the virus. Persistent infection may be harmless or may cause disease by a variety of mechanisms. These include slowly progressive cell destruction and immune disease as the result of deposition of antibody-virus complexes or in response to cells antigenically altered by virus or by the activation of latent virus by a variety of mechanisms—which include alteration of immune responsiveness due to disease, aging or immunosuppressive therapy.

Speculation concerning the role of viruses in a variety of disease states can easily sound like science fiction. However, on the basis of what we now know of viral replication and the intimate relationship between viral nucleic acids and the genetic apparatus of the cell, extraordinary possibilities become hypothetically feasible. Therefore, it would seem most likely that it is only a matter of time until at least some human cancers are proven to be caused by viruses. An etiologic role of viruses, particularly measles, in multiple sclerosis is highly probable. Animal models exist that implicate viruses in conditions that resemble multiple myeloma and various of the so-called autoimmune diseases and, as already pointed out, theoretical grounds also exist to support such an hypothesis. Gajdusek[2] has stated that the pathology of the spongioform encephalopathies may resemble the process of normal aging and has raised the question as to whether or not viruses may accelerate the rate of aging.

Far out ideas? Perhaps, and certainly not easy to prove, but with viruses it is hard to conceive of anything as completely impossible. However, keep in mind that it is a virologist speaking.

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The Fluoridation of Drinking Water

THE FLUORIDATION of drinking water continues to be a public health issue in many places in the United States. It has been and remains the subject of scientific, social, economic and political scrutiny by both its advocates and its opponents. The subject is examined further elsewhere in this issue of THE WESTERN JOURNAL OF MEDICINE, this time in relationship to dietary fluoride ingestion.

It is perhaps worth noting that as recently as last December the House of Delegates of the American Medical Association adopted upon recommendation of its Council on Foods and Nutrition[1] a statement on fluoridation which includes the following significant comment:

"No alternative techniques for the prophylactic application of fluorides can at present replace the fluoridation of drinking water as an effective and practical public health measure. Where water fluoridation at optimal levels cannot be used, however, other ways of supplying the proper amount of fluoride should be encouraged."

Until there is convincing evidence to the contrary we believe the fluoridation of drinking water is a desirable public health measure and that it should continue to be supported by the medical profession.

REFERENCE

1. Fletcher DC: Revised statement on fluoridation—AMA Council on Foods and Nutrition (Adopted Dec 1, 1974, by AMA House of Delegates) (Editorial). JAMA 231:1167, Mar 17, 1975